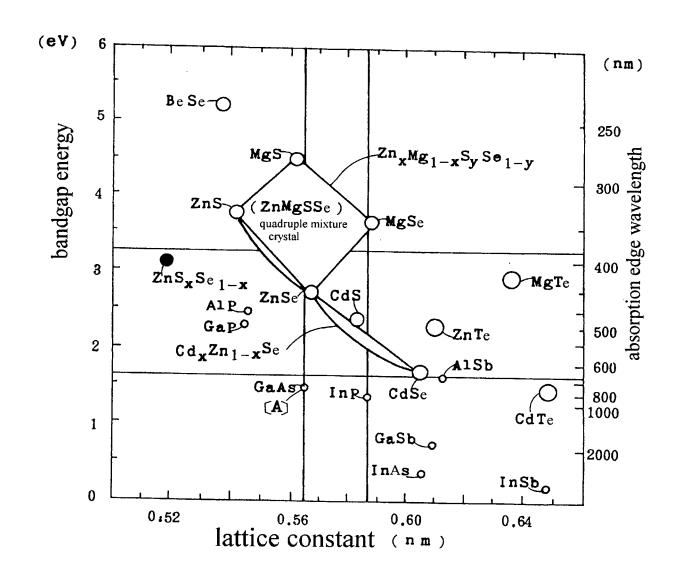
Matter No.: 14804-010001 Page 1 of 17 Applicant(s): Koshi Ando et al.
ON-P-GaAs SUBSTRATE Zn_{1-x}Mg_xS_ySe_{1-Y} PIN PHOTODIODE AND ON-P-GaAs SUBSTRATE Zn_{1-x}Mg_xS_ySe_{1-Y} AVALANCHE PHOTODIODE

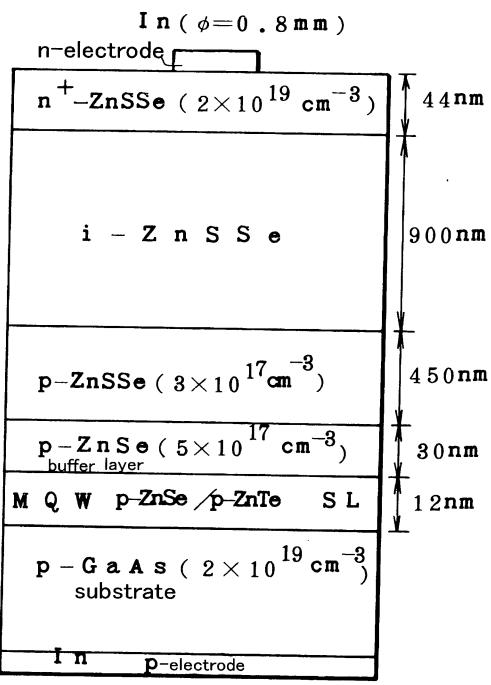
Fig. 1



Matter No.: 14804-010001 Page 2 of 17 Applicant(s): Koshi Ando et al. ON-P-GaAs SUBSTRATE Zn_{1-X}Mg_XS_YSe_{1-Y} PIN PHOTODIODE AND ON-P-GaAs SUBSTRATE Zn_{1-X}Mg_XS_YSe_{1-Y} AVALANCHE PHOTODIODE

Fig. 2





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Fig. 3

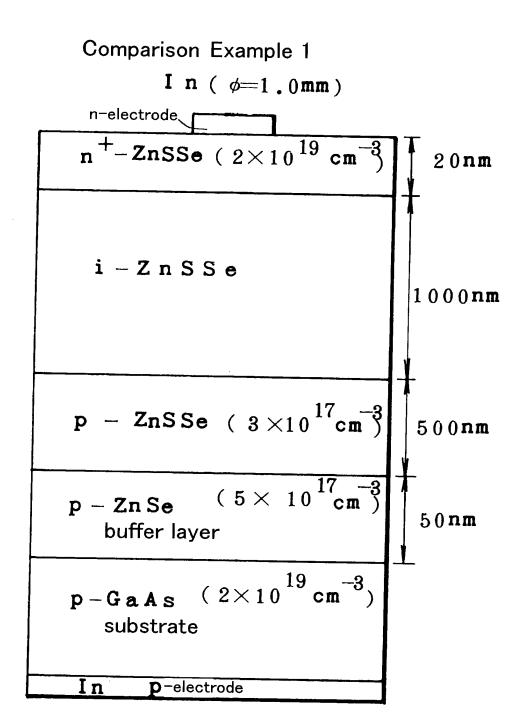


Fig. 4

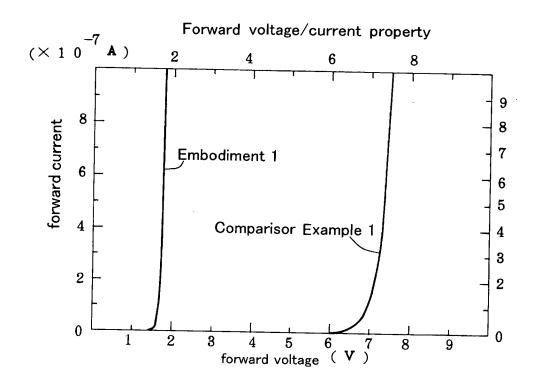
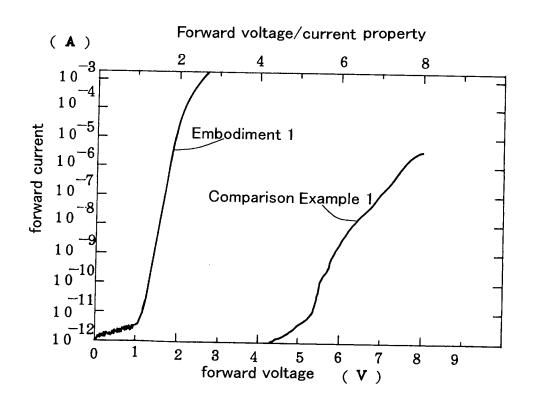
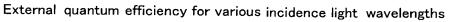


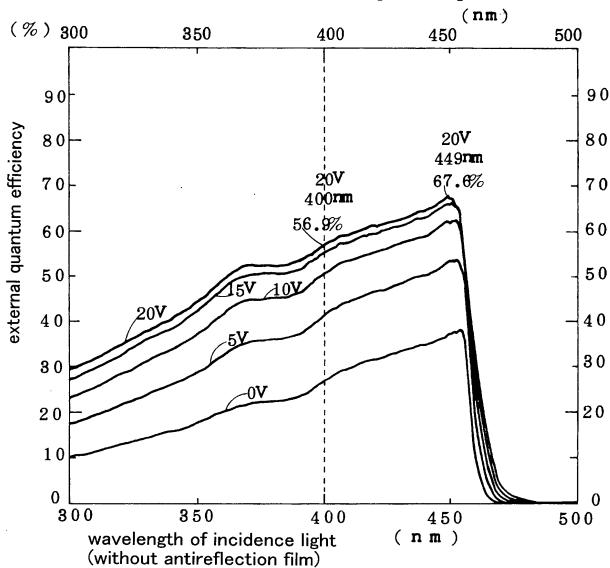
Fig. 5



Matter No.: 14804-010001 Page 5 of 17 Applicant(s): Koshi Ando et al.
ON-P-GaAs SUBSTRATE Zn_{1-x}Mg_xS_ySe_{1-y} PIN PHOTODIODE AND ON-P-GaAs SUBSTRATE Zn_{1-x}Mg_xS_ySe_{1-y} AVALANCHE PHOTODIODE RATE ZN1-XMGXSYSE1-Y AVALANCHE PHOTODIODE

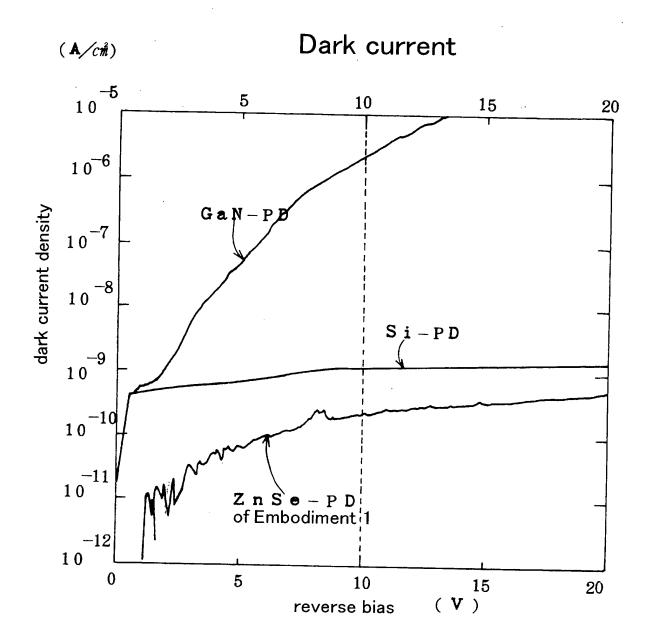
Fig. 6





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Fig. 7



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Fig. 8

Molecular beam epitaxial growth apparatus

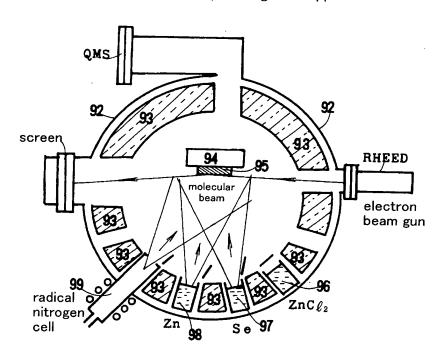


Fig. 9

(p - Z n S e)		
MQW	structure A	structure B
p-ZnTe	0.3nm	0.6nm
p-ZnSe	2.1nm	2.1nm
p-ZnTe	0.6nm	0.6nm
p-ZnS.	2.1nm	2.1nm
p-ZnTe	0.9nm	1.2nm
p-ZnSe	2.1nm	2.1nm
p-ZnTe	1.2nm	1.2nm
p-ZnSe	2.1nm	2.1nm
p-ZnT	1.5nm	1.8nm
p-ZnSe	2.1nm	2.1nm
(p -	GaAs	substrate)

Applicant(s): Koshi Ando et al.

ON-P-GaAs SUBSTRATE Zn_{1-x}Mg_xS_ySe_{1-y} PIN PHOTODIODE

AND ON-P-GaAs SUBSTRATE Zn_{1-x}Mg_xS_ySe_{1-y} AVALANCHE

PHOTODIODE

Fig. 10

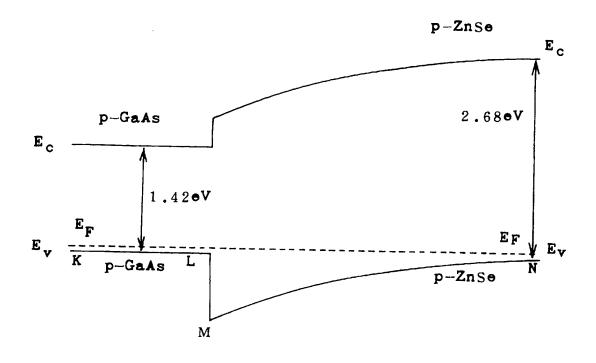
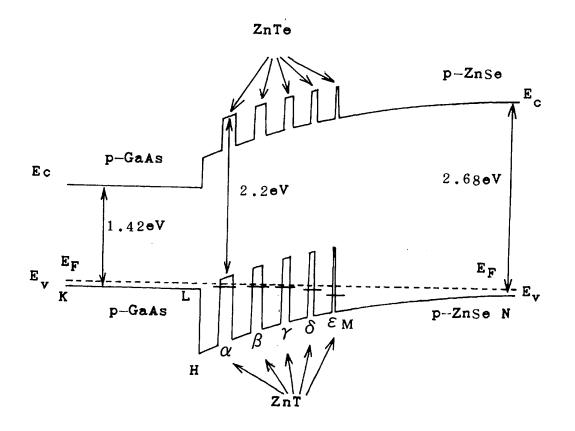


Fig. 11



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Fig. 12

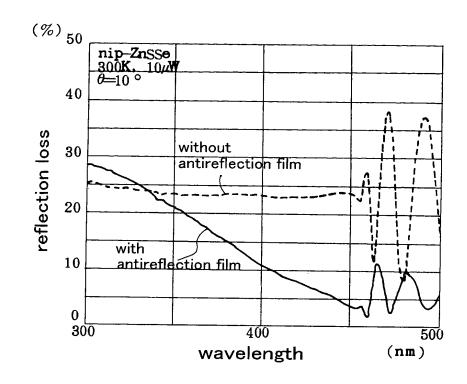
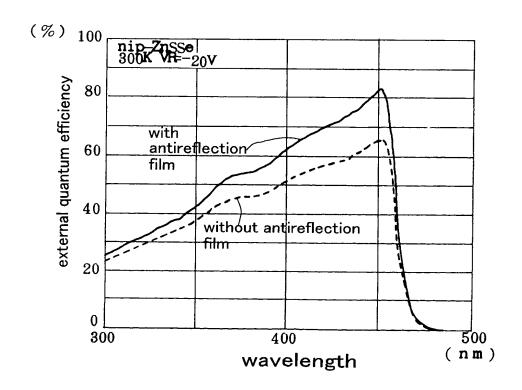


Fig. 13



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ON-P-GaAs SUBSTRATE Zn_{1-x}Mg_xS_ySe_{1-y} PIN PHOTODIODE AND ON-P-GaAs SUBSTRATE Zn_{1-x}Mg_xS_ySe_{1-y} AVALANCHE PHOTODIODE

Fig. 14

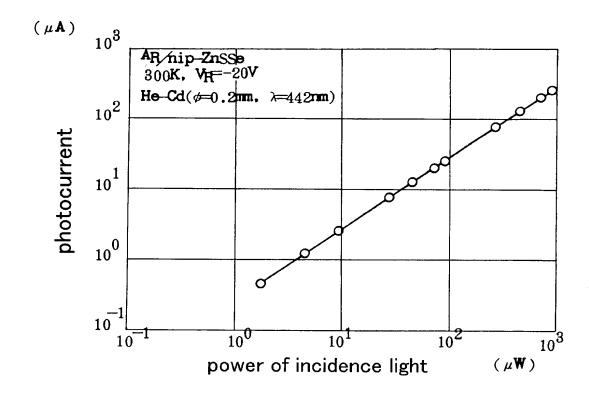
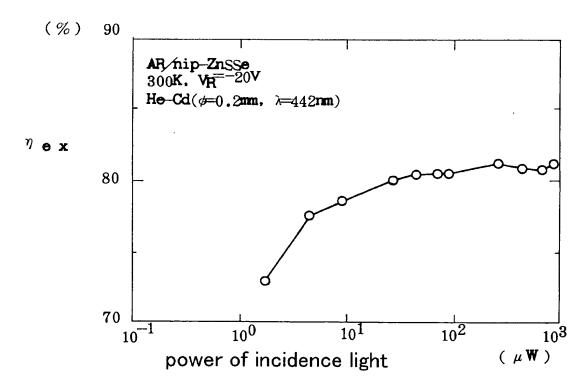


Fig. 15



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Fig. 16

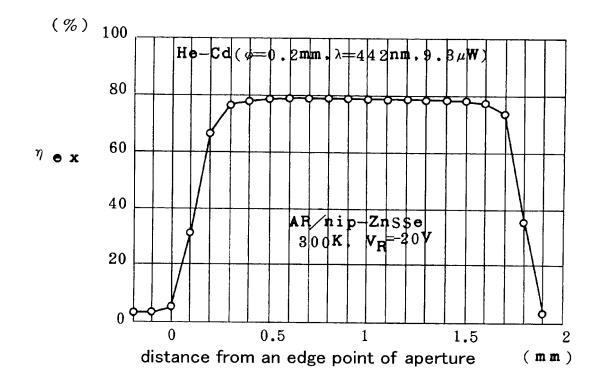
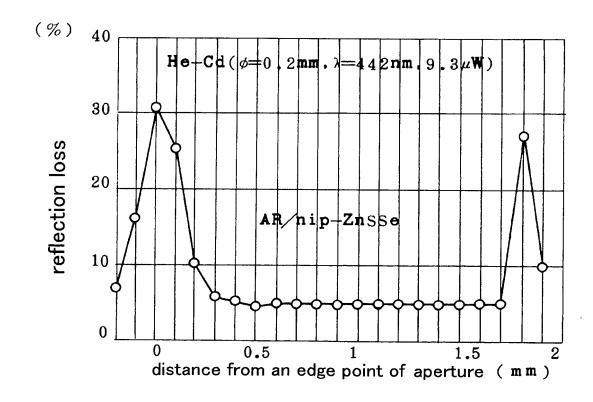


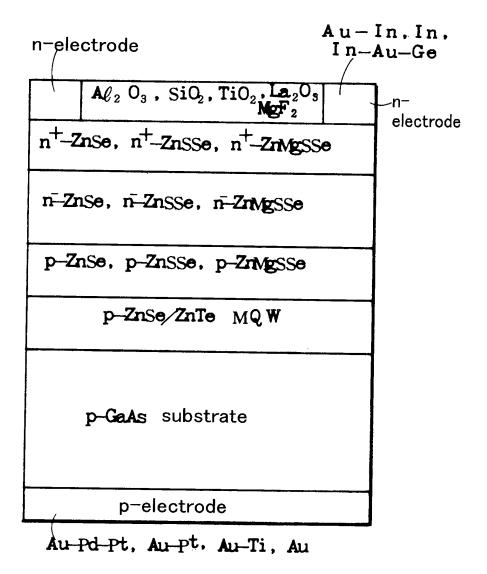
Fig. 17



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Fig. 18

Avalanche photodiode



Applicant(s): Koshi Ando et al.

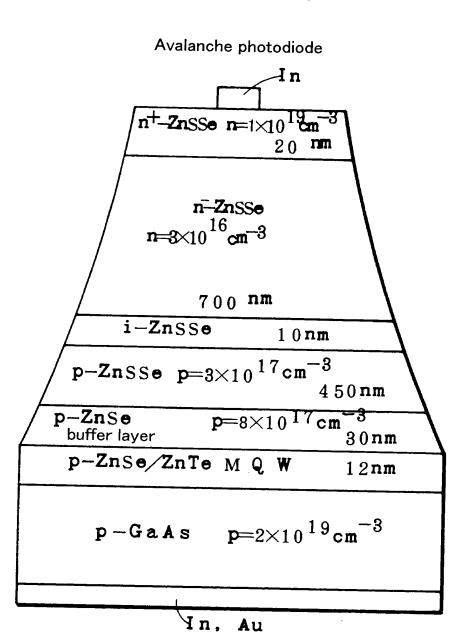
ON-P-GaAs SUBSTRATE Zn_{1-x}Mg_xS_ySe_{1-y} PIN PHOTODIODE

AND ON-P-GaAs SUBSTRATE Zn_{1-x}Mg_xS_ySe_{1-y} AVALANCHE

PHOTODIODE

Fig. 19

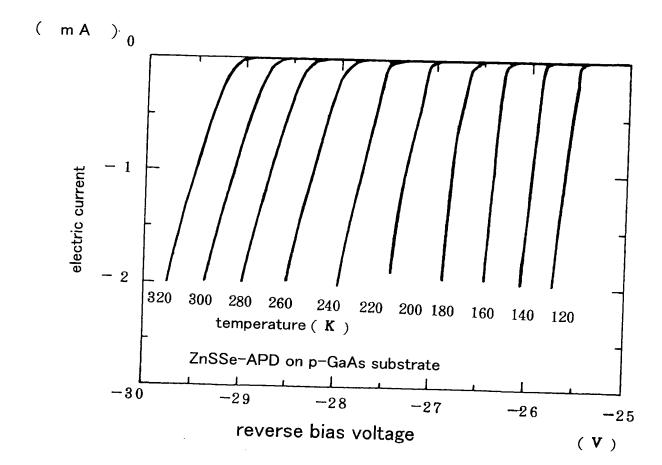
Embodiment 3



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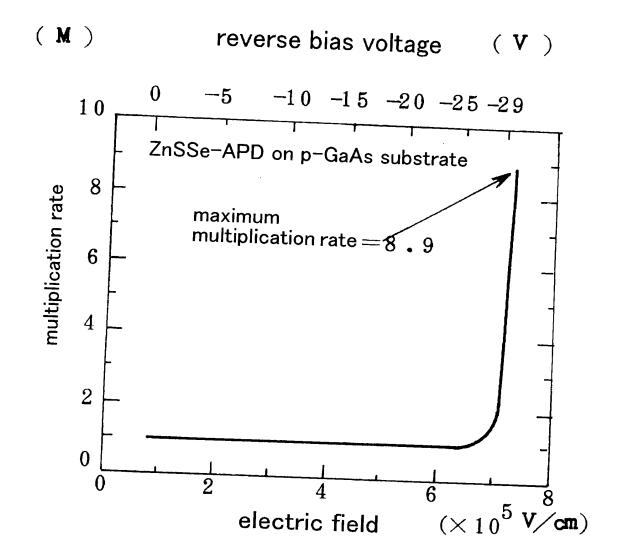
Fig. 20

Avalanche breakdown property of pin+-ZnSSe APD



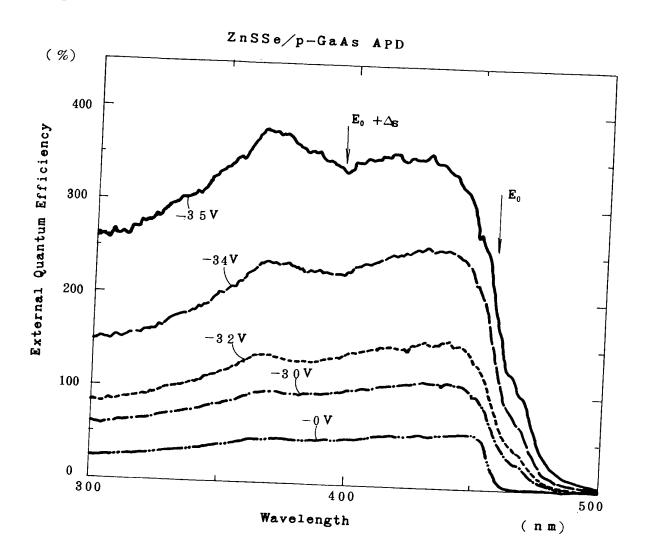
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Fig. 21



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ON-P-GaAs SUBSTRATE Zn_{1-x}Mg_xS_ySe_{1-y} PIN PHOTODIODE AND ON-P-GaAs SUBSTRATE Zn_{1-x}Mg_xS_ySe_{1-y} AVALANCHE PHOTODIODE

Fig. 22



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Fig. 23

M Q W of Embodiment 2

(p-ZnSe)

p-ZnTe	0.2nm	
p-ZnSe	2.0nm	
p-ZnTe	0.4nm	
p-ZnSe	2.0nm	
p-ZnTe	0.6nm	
p-ZnSe	2.0nm	
p-ZnTe	0.8nm	
p-ZnSe	2.0 nm	
p-ZnTe	1.0nm	
p-ZnSe	2.0 nm	
(p-GaAs substrate)		